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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,379	03/04/2002	Brian A. Jones	40021.008	9971

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EXAMINER
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ROBERTSON, JEFFREY

ART UNIT	PAPER NUMBER
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1712

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DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

10/091,379

Applicant(s)

JONES ET AL.

Examiner

Jeffrey B. Robertson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,21,24,27 and 29-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11,16-20,22,23,25 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 14,15,26 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,7. 6) ☐ Other:

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-11, 14-28, and 36-38 and Group B, claims 22, 25, and 28 in the species election in Paper No. 6 is acknowledged. The traversal is on the ground(s) that in the restriction between Groups I and II and Groups II and III that the invention of Group II has not been shown useful as an adhesive component. Applicant has attached word searches done in the patent database. Applicant also argues that as to the restriction between Groups I and III fails to establish what the single combination is or where applicant has disclosed where the inventions of Groups I and III can be used together in a single combination. This is not found persuasive. In response to applicant's argument regarding Group II, the examiner has provided a copy of U.S. Patent Application Publication US 2002/0198353, which shows that polycarbosilanes are used in the art as adhesion promoters. In response to applicant's argument regarding Groups I and III, on page 5 of the specification, in paragraph [0014], applicant sets forth that stability may be increased through pre-polymerization of suitable monomers followed by surface bonding or by first bonding reactive monomers to the surface followed by cross-polymerization, which shows that the materials are useable together. It is noted that applicant has not provided any arguments regarding the two distinct species. Thus, the species election has been treated as being made WITHOUT traverse.

The requirement is still deemed proper and is therefore made FINAL.

***Information Disclosure Statement***

2. The information disclosure statement filed 10/21/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the Walter et al. article has not been considered. The examiner has crossed out this reference on the PTO-1449 form.

***Claim Suggestions/Comments***

3. For claims 14 and 26, it is noted that applicant has included the group  $-(CH_2)_3-N^+Cl^-$ . In this group the designation of "N<sup>+</sup>" is incomplete since the other three groups around the nitrogen are not specified. It is also noted that the same language is present in the specification and that applicant does not further define what the other substituents around the nitrogen are in the specification (see pages 11-12, paragraph [0034]). It is the examiner's position however, that one of ordinary skill in the art would know appropriate substituents that are commonly present in ammonium salts. Also for claims 14 and 26, applicant has set forth that p and q are integers from 0 to 100. Since applicant has positively recited the polydentate silane, the examiner has interpreted the claim such that this component must be present, even though p and q may both equal 0. Applicant may want to consider whether or not the interpretation of p and q both equaling 0 was intended.

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***Specification***

4. The disclosure is objected to because of the following informalities: on page 11, paragraph [0034], in formula (I), in the "m" unit, the "2" should be subscripted.

Appropriate correction is required.

***Claim Objections***

5. Claims 14, 15, and 26-28 are objected to because of the following informalities:

For claims 14 and 26, in formula (I), in the "m" unit, the "2" should be subscripted.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-11, 16-20, 22, 23, 25, and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohnaka et al. (U.S. Patent No. 5,194,333).

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For claims 1, 2, 5, 6-8, 9-11, 16-20, 23, and 36-38, in column 2, lines 9-31, Ohnaka teaches that polycarbosilane having alkali and acid resistance (stable to hydrolytic cleavage conditions) is used to coat particles of silica gel to provide a chemically stable (durable) packing material for chromatography. Here, Ohnaka indicates that the polycarbosilane is polymeric where "n" is a positive integer. In column 4, line 65, Ohnaka indicates that the monomer used to produce the polycarbosilane is octadecylmethylsilyl dichloride. For claims 3, 4, and 17, this monomer includes a chloride leaving group and an alkyl group (methyl group). For claims 22 and 25, in Example 1, column 4, line 65 through column 5, line 18, Ohnaka teaches that the monomer is polymerized prior to coating the silica surface.

8. Claims 1-4, 9, 11, 16, 17, 22, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by McGill et al. (U.S. Patent Application Publication US 2002/0009603).

For claims 1, 2, 9, 11, 16, and 17, McGill teaches on page 3, paragraphs [0022]-[0028], a carbosilane polymer. On page 3, paragraph [0030], McGill teaches that the polymer is coated on a substrate. On page 4, paragraph [0044], McGill teaches that the substrate is a metal oxide. For claims 3 and 4, on page 6, paragraph [0063], McGill teaches that one of the starting materials en route to the preparation of the carbosilane is allyldichlorosilane. This falls within the definition of a monomer that has a chloride leaving group and an alkyl group. On page 1, paragraph [0003], McGill teaches that the polymers are used in chromatography and on page 1, paragraph [0007], McGill teaches that the polymers preferably have long-term stability (durability). For claims 22 and 25,

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on page 5, paragraph [0052], McGill teaches that the polymer is applied to the substrate.

9. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Glajch et al. (U.S. Patent No. 4,746,572).

For claim 11, in column 5, lines 34-62, Glajch teaches that metal oxide substrate, preferably silica is coated with a bidentate silane. In column 9, lines 26-53, Glajch teaches that the reagent used to prepare the organosilane coating is a bidentate silane that has a reactive group such as chlorine, and also contains R<sub>1</sub>-R<sub>4</sub> groups that provide alkyl substitution. In column 3, lines 26-37, Glajch shows the coated surface.

10. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Kirkland et al. (U.S. Patent No. 5,869,724).

For claim 11, in column 2, lines 35-62, Kirkland teaches that bidentate silanes are bonded to the surfaces of support materials. In column 8, lines 32-35, Kirkland teaches a silica (metal oxide) surface. In column 9, line 2, Kirkland teaches that the organosilane coating is derived from dichloromethylvinylsilane, a monomer containing both a chlorine leaving group and an alkyl group.

11. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Kirkland et al. (U.S. Patent No. 5,948,531).

For claim 11, in column 2, lines 40-63, Kirkland teaches that bidentate silanes are bonded to the surfaces of support materials. In column 8, lines 37-41, Kirkland teaches a silica (metal oxide) surface. In column 2, line 64 through column 3, line 9,

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Kirkland teaches that the organosilane coating is derived from a bidentate chlorosilane, a monomer containing both a chlorine leaving group and an alkyl group.

***Allowable Subject Matter***

12. Claims 14, 15, 26, and 28 would be allowable if rewritten or amended to overcome the objections set forth in this Office action.
13. The following is a statement of reasons for the indication of allowable subject matter: although the prior art cited above teaches the use of polydentate silanes, the prior art does not teach situations where the polydentate silanes possess a leaving group and one of the functional groups required for  $R_1$  and  $R_2$ . The Kirkland et al. references are the closest prior art. These references teach the presence of a leaving group, but not the particular functional groups set forth in claims 14 and 26. In addition, these references set forth situations where  $p+q=2$ , which is prohibited by applicant.

***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wu et al. (U.S. Patent No. 6,489,030) is cited for general interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (703) 306-5929. The examiner can normally be reached on Mon-Fri 7:00-3:00.

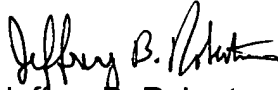
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703)



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872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Jeffrey B. Robertson  
Primary Examiner  
Art Unit 1712

JBR  
June 20, 2003